

Gulf States, except along the immediate coast, and at Atlantic coast stations between southern New England and Georgia. The most marked departures above the normal pressure were noted on the west coast of the Gulf of Saint Lawrence, and over the central part of the middle plateau region, where they equalled, or exceeded, .05, and the greatest departures below the normal pressure occurred on the Pacific coast, where they varied from .02 to .04.

The distribution of monthly mean pressure is of interest when considered in connection with the movements of low pressure storms and monthly precipitation. It has been found that marked departures from the usual distribution of monthly mean pressure cause the low pressure storms of the month to assume abnormal paths. In 1889 this result was noticeable in August and December when the pressure over the southeastern states was more than .10 above the normal, and no low pressure storms traversed the country east of the Mississippi River and south of the Ohio River, and in April when the pressure averaged more than .10 above the normal over the Canadian Maritime Provinces, and a large proportion of the low pressure storms passed southeastward from the Lake region and advanced over the Atlantic Ocean south of Nova Scotia, the normal course of storms in the latter-named regions being east or north of east from the Lake region. The great excess in rainfall in sections of the middle Atlantic states during the spring and summer months may also be attributed to an abnormal distribution of pressure, as during those months the pressure was unusually high between the coast of the United States and the Azores, which condition caused an inflow of vapor-laden southeast winds from the ocean over the coast districts, and also caused the storms of the north Atlantic to assume abnormal northerly paths.

PRECIPITATION.

The heaviest yearly precipitation reported was one hundred and eleven inches, at Delta, Shasta Co., Cal., and the yearly precipitation exceeded seventy inches in areas in eastern and southeastern Pennsylvania, in southeastern Virginia, and at Neah Bay, Wash. Sixty inches, or more, of precipitation were reported over the eastern parts of the middle Atlantic states, in eastern North Carolina, on the immediate Pacific coast between the forty-third and forty-ninth parallels, in extreme northwestern California, and in eastern California between the thirty-eighth and thirty-ninth parallels. Within an area extending from north-central Nevada southward over Nevada, southeastern California, and southwestern Arizona the yearly precipitation was less than five inches, and it generally amounted to less than twenty inches in the Rocky Mountain and plateau regions, except in areas in northwestern Wyoming, northeastern Nevada, southwestern Colorado, and from central Arizona northward over adjoining parts of southwestern Utah and eastern Nevada, where it varied from twenty to nearly thirty inches.

The greatest excesses in precipitation for the year occurred over eastern and central Virginia and thence northward over the District of Columbia, central Maryland, and south-central Pennsylvania, where the average annual precipitation was exceeded by more than seventeen inches. The yearly precipitation was generally above the normal in the Atlantic states, except along the greater part of the immediate coast and in Florida; it was also above the normal on the Pacific coast south of the forty-first parallel, and within an area extending from the south Pacific coast northeastward over southern Nevada, western and northern Arizona, Utah, thence eastward to Nebraska and Kansas, and thence southward over central Texas. On the Pacific coast the greatest excesses in precipitation were noted along the California coast from San Francisco to Los Angeles, where the rainfall for the year was more than twelve inches greater than the annual average amount, and where at Los Angeles the excess for the year was nearly sixteen inches. In the central valleys the greatest excesses occurred in eastern Kansas, where they were more than eight

inches, and where at Topeka the excess over the annual average was more than ten inches.

At a number of the regular stations of the Signal Service in the middle Atlantic states the annual precipitation was the heaviest ever reported, and a comparison of the records of the several stations shows the following absolute excesses in precipitation for 1889. At New York City the total precipitation, 58.68, was 3.34 greater than that of 1884; at Baltimore, Md. the total amount, 62.35, was 10.24 greater than that of 1886; at Washington City the total precipitation, 61.33, was 1.24 greater than that of 1878; at Lynchburgh, Va., the total precipitation, 60.58, was 3.30 greater than that of 1884; at Norfolk, Va., the total precipitation, 70.72, was 1.59 greater than that of 1877. On the extreme north Pacific coast the yearly precipitation is generally heavier than in any other section of the country, and at Neah Bay, Wash., where the annual precipitation averages 101.51, and amounted to 123.23 in 1886, the total rainfall for 1889 was but 79.83. At Tatoosh Island, Wash., where the annual average precipitation is 92.39, and where, in 1886, 112.47 fell, the rainfall for 1889 was 67.95. At Delta, Cal., where one hundred and eleven inches were reported for 1889, the yearly average rainfall is 44.23, and the greatest previous yearly precipitation, 53.54, was reported in 1885. On the middle and south Pacific coast the heaviest yearly precipitation occurred in 1884, when the precipitation of the current year was exceeded by amounts varying from 1.88 at San Francisco, Cal., to 11.56 at San Diego, Cal. In other sections of the country the years of occurrence of the heaviest precipitation varied. In New England the heaviest annual precipitation, 65.53, was reported at Boston, Mass., in 1878; in the middle Atlantic states the heaviest precipitation reported previous to the current year was 69.13, at Norfolk, Va., in 1877; in the south Atlantic states 102.4 fell at Hatteras, N. C., in 1877; in the Gulf states 90.97 fell at Mobile, Ala., in 1881; in the Ohio valley and Tennessee 73.87 fell at Knoxville, Tenn., in 1875; in the Lake region 60.24 fell at Buffalo, N. Y., in 1878; in the upper Mississippi valley 61.58 fell at Cairo, Ill., in 1882; in the Missouri Valley 52.06 fell at Leavenworth, Kans., in 1877; in the extreme northwest 34.01 fell at Moorhead, Minn., in 1882; in the Rocky Mountain and plateau regions, 25.67 at Fort Assinniboine, Mont., in 1884; 23.64 at Salt Lake City, Utah, in 1875; 33.55 at Dodge City, Kans., in 1881; and 48.45 at Fort Sill, Tex., in 1877. At Red Bluff, Cal., the heaviest yearly precipitation, 48.96, occurred in 1878; at Sacramento, Cal., 34.92, in 1884; at San Francisco, Cal., 38.82, in 1884; at Los Angeles, Cal., 40.39, in 1884; at San Diego, Cal., 27.59, in 1884; and at Yuma, Ariz., 5.86, in 1884.

The greatest deficiencies in annual precipitation occurred in east-central Louisiana and west-central Washington, where the total precipitation was twenty inches, or more, less than the usual yearly amount. The precipitation for the year was also below the normal from the Pacific coast north of the forty-second parallel eastward to the upper lake region, and thence southward over the Mississippi Valley to the Gulf of Mexico; in Nevada, New Mexico, eastern Arizona, along the entire coast of the Gulf of Mexico, and at a majority of coast station from New Brunswick to Florida. The greatest deficiency noted on the Atlantic coast was 15.39 inches at Block Island, R. I. Chart vii, in showing the departures of the annual precipitation from the annual average precipitation, indicates the remarkable distribution of rainfall for the year. It will be seen that while the annual precipitation in the middle Atlantic states averaged about one-fourth greater than the average yearly amount of precipitation in that region, deficiencies occurred at middle Atlantic coast stations, and that but about 70 per cent. of the yearly average rainfall was reported at Block Island, R. I. On the south Pacific coast the precipitation was about two-thirds greater, and on the middle Pacific coast about one-third greater than usual, while on the north Pacific coast but about four-fifths of the annual average rainfall fell. In the west Gulf states there was an average deficiency of about 20 per cent., while within a limited

area about San Antonio, Tex., the yearly rainfall was about 25 per cent. greater than the annual average amount.

At stations in extreme eastern New England, northeastern Florida, the east Gulf states, the Ohio Valley and Tennessee, the upper and lower lake region, the upper Mississippi valley, the Missouri Valley, the extreme northwest, the northeastern slope of the Rocky Mountains, the southern plateau region, and on the north Pacific coast, the precipitation for 1889 was the least reported during the periods of observation. The smallest amount of annual precipitation ever reported by a regular station of the Signal Service was 0.74, at Yuma, Ariz., in 1880. The following are some of the more notable deficiencies in precipitation for 1889 as compared with the least yearly precipitation of preceding years: Eastport, Me., total for 1889, 42.46, 0.18 less than in 1880; Mobile, Ala., total for 1889, 49.88, 2.12 less than in 1887; Chattanooga, Tenn., total for 1889, 49.32, 1.76 less than in 1887; Toledo, Ohio, total for 1889, 21.84, 3.99 less than in 1874; Saint Paul, Minn., total for 1889, 16.96, 5.82 less than in 1878; Helena, Mont., total for 1889, 6.71, 3.43 less than in 1888; Tatoosh Island, Wash., total for 1889, 67.95, 7.23 less than in 1884.

The following are among the more notable meteorological features of the year:

In March the rainfall was very heavy on the middle and south Pacific coasts, where more than double the usual amount for the month fell.

In April there was a large excess of rainfall in the Rio Grande Valley and in the middle Atlantic states, and a marked deficiency in rainfall on the south Pacific coast.

In May the rainfall on the middle Pacific coast was about two and one-half times greater than the average for the month, and in the middle Atlantic states the rainfall was about one-half greater than usual. The exceptionally heavy rains in the middle Atlantic states, more especially those which fell during the last two days of the month, caused destructive floods, while great deficiencies in rainfall were noted in sections of the Southern States, where damaging drought was reported.

In June the precipitation was excessive over the eastern part of the country, and destructive floods occurred in sections of the Middle States at the beginning of the month, while in Dakota, Montana, and Idaho less than one-half of the usual amount of precipitation fell, and severe droughts were experienced.

In July damaging drought prevailed in Nevada, southern California, Utah, and Montana.

In August the precipitation was heavy in areas in the Atlantic coast states; the monthly rainfall was the least ever reported for August in parts of the Ohio Valley and Michigan, and damaging drought prevailed in parts of the Ohio Valley, Texas, Utah, and in the north-central states and territories. Killing frost was reported at Galena, Ill., and snow fell on the 15th at Greensburgh, Pa.

In September frost occurred in the northern part of the Southern States, its occurrence being seasonable. The rainfall was very unequally distributed east of the Rocky Mountains, large excesses and marked deficiencies occurring in contiguous states and at neighboring stations. Navigation was closed on the upper Mississippi River by low water.

In October killing frost occurred in North Carolina, South Carolina, northern Mississippi, and Tennessee, its occurrence being one to two weeks earlier than usual. Very heavy rain fell on the middle and south Pacific coasts, the precipitation for the month being the heaviest ever reported in those districts for October. Navigation was interrupted or suspended on the upper Mississippi and upper Tennessee rivers by low water, and damaging drought occurred in some of the southern and central states.

In November killing frost occurred in Alabama, its occurrence being about ten days later than usual, and light frost was reported as far south as Brownsville, Tex., and Los Angeles, Cal. Navigation was interrupted or suspended by ice on the upper Mississippi River above Keokuk, Iowa, and on the middle and upper Missouri River.

In December the temperature was above the normal, except on the Pacific coast and over the western part of the plateau region, and east of the Rocky Mountains, and in the middle and southern plateau regions it was generally the warmest December on record. The precipitation was the least ever reported for December in the central and southeastern states, while at Los Angeles, Cal., the monthly rainfall was the greatest ever noted for December. The Central Pacific Railroad crossing the summit of the Sierra Nevada Mountains was blockaded several days by snow. Destructive floods occurred in California, Arizona, and southern Nevada.

FOG IN 1889.

The following table shows the number of days in each month for which fog was reported on the north Atlantic Ocean along, or near, the trans-Atlantic steamship routes, west of the fortieth meridian, in 1889:

Month.	Between W. 40° and 55°.	Between W. 55° and 65°.	West of 65°.	Month.	Between W. 40° and 55°.	Between W. 55° and 65°.	West of 65°.
January.....	5	10	5	August.....	22	6	9
February.....	13	4	3	September.....	19	6	8
March.....	17	12	7	October.....	19	6	4
April.....	19	18	16	November.....	15	4	3
May.....	15	15	20	December.....	4	4	3
June.....	19	18	15	Totals.....	185	113	109
July.....	18	10	11				

From the above it will be seen that in the vicinity of the Banks of Newfoundland fog occurred most frequently from April to October, the greatest number of foggy days for any month, twenty-two, being noted in August, and that in January and December the foggy days numbered but five and four, respectively. Between the fifty-fifth and sixty-fifth meridians fog occurred most frequently in the spring and early summer months, the greatest number of foggy days, eighteen, being noted in April and June, and the least number, four, in February, November, and December. West of the sixty-fifth meridian the months of greatest fog-frequency were April, May, and June, the greatest number of foggy days, twenty, being noted in June, while during the winter months the foggy days diminished in number to three in February and December. In the preceding year fog was reported most frequently in the vicinity of the Grand Banks in July, when it was noted for twenty-eight days, from which month there was a gradual decrease in fog-frequency until December; for that year the period of greatest fog-frequency between the fifty-fifth and sixty-fifth meridians corresponded with that of the Grand Banks, although the aggregate number of foggy days for the year was more than fifty per cent. less, while to the westward of the sixty-fifth meridian the greatest number of foggy days, twenty-one, was noted in May, from which month there was a gradual decrease in the number of foggy days until December. Reports show that the current year had a less number of foggy days near the Grand Banks and west of the sixty-fifth meridian, fourteen and fifteen, respectively, and a greater number, eighteen, between the fifty-fifth and sixty-fifth meridians, than were noted for the preceding year. As has been stated in each succeeding issue of the MONTHLY WEATHER REVIEW since 1886, the development of fog along the trans-Atlantic steamship routes west of the fortieth meridian bears a definite relation to the low pressure storms which advance eastward from the American continent. The fogs of the Grand Banks are found to develop in the eastern quadrants of low pressure storms, and are apparently due to the precipitation of the aqueous vapor contained in the warm air from over the Gulf Stream which is drawn over the cold surface of the Arctic current and ice fields by the southerly winds which prevail to the eastward of low pressure storms. To the westward of the fifty-fifth meridian the development of fog generally attends the approach or passage to the northward of low pressure storms, which cause an inflow of warm, moist

air from the Gulf Stream over the cold surface of the Arctic current which flows along the coast, and whose deep-flowing, colder waters are forced to the surface by Sable Island Bank and George's and Nantucket shoals, and where fog is generally found to attend or follow rain and to precede clearing weather.

Annual summary for 1889—Signal Service stations.

State and station.	Temperature—degrees Fahrenheit.						Precipitation in inches.			Montana.	Inches.
	Extremes for 1889.						Total 1889.	Departure from normal.	Percentage of normal.		
	Mean annual.	Departure from normal.	Max.	Date of max.	Min.	Date of min.	Inches.	Inches.			
Alabama.	°	°	°		°					Fort Assiniboine.	°
Mobile.....	66.4	-1.1	95	July 23	29	Feb. 7	49.88	-15.03	77	43.4	+3.1
Montgomery.....	65.3	-0.6	99	July 24	21	Feb. 7	45.62	-8.15	85	44.5	+2.4
Arizona.										Fort Maginnis.	°
Fort Grant.....	61.6	+0.9	100	July 2	20	Jan. 20	13.32	-3.45	79	46.1	+1.1
Whipple Barracks.....	53.1	+0.6	100	July 3	-8	Jan. 20	20.83	+4.74	130	45.1	+2.1
Yuma.....	73.0	+1.1	117	July 3	34	Feb. 18	4.69	+1.77	161		
Arkansas.										Nevada.	°
Fort Smith.....	61.6	+1.0	98	Aug. 14	13	Jan. 28	43.20	+0.89	102	North Platte.	48.8
Little Rock.....	61.8	-0.6	95	July 17	17	Feb. 24	54.21	+0.74	101	-0.1	-102
Colorado.										Omaha.....	51.2
Colorado Springs.....	48.4		96	July 6	-8	Feb. 20	13.77	-0.57	96	Valentine.....	48.8
Denver.....	50.0	+0.2	100	July 31	-7	Feb. 17	14.75	+0.17	101		
Montrose.....	49.7	-0.1	96	July 31	-6	Jan. 20	7.20			Winnemucca.....	49.9
Pueblo.....	52.2	-0.3	102	July 31	-11	Jan. 18	10.50			New Hampshire.	48.1
Connecticut.										Manchester.....	48.1
New Haven.....	50.6	+1.6	91	May 10	-3	Feb. 24	59.78	+10.08	120	New Jersey.	52.3
New London.....	51.3	+1.9	86	July 8	-1	Feb. 24	49.70	+0.61	101	Atlantic City.....	50.8
California.										New Mexico.	49.8
Eureka.....	52.8		77	Sept. 25	28	Feb. 17	18.70			Santa Fé.....	51.3
Fresno.....	64.3		112	July 4	27	Feb. 18	12.27			Fort Stanton.....	51.3
Keeler.....	62.3	+1.4	107	July 29	21	Feb. 17	2.00			New York.	51.3
Los Angeles.....	63.0	+0.8	103	Sept. 16	32	Jan. 19	33.31	+15.77	100	Albany.....	50.0
Red Bluff.....	63.2	+1.1	111	July 29	26	Feb. 15	32.87	+7.14	128	Buffalo.....	47.1
Sacramento.....	60.9	+0.9	104	July 30	31	Feb. 17	27.48	+6.05	128	New York City.....	53.5
San Diego.....	62.6	+1.8	91	Sept. 25	36	Jan. 21	16.03	+5.18	148	Oswego.....	46.0
San Francisco.....	57.9	+1.2	89	Sept. 24	39	Feb. 17	36.94	+13.45	157	Rochester.....	47.3
District of Columbia.										North Carolina.	60.6
Washington City.....	55.1	+0.4	93	May 9	4	Feb. 24	61.33	+17.42	140	Charlotte.....	59.4
Florida.										Hatteras.....	61.2
Cedar Keys.....	69.0	-1.4	91	Sept. 15	34	Nov. 30	43.37	-10.79	80	Kitty Hawk.....	60.3
Jacksonville.....	68.4	-1.5	97	July 23, 24	30	Nov. 30	46.22	-10.70	81	Raleigh.....	59.4
Key West.....	76.0	-1.9	89	July 1	54	Jan. 29	52.67	+13.50	134	Southport.....	62.6
Pensacola.....	68.3	+0.2	94	July 18	29	Feb. 7	52.74	-12.12	81	Wilmington.....	62.5
Georgia.										North Dakota.	62.5
Atlanta.....	61.1	0.0	95	July 24	14	Feb. 7	54.75	-1.32	98	Bismarck.....	42.7
Augusta.....	64.5	-0.5	100	July 11	20	Feb. 7	49.25	+0.61	101	Fort Buford.....	41.4
Savannah.....	65.6	-1.5	96	May 11	24	Feb. 7	47.55	-5.01	90		
Idaho.										Ohio.	54.8
Boise City.....	52.2	+1.6	102	July 29	2	Jan. 2	10.95	-2.52	81	Cincinnati.....	54.8
Illinois.										Cleveland.....	49.8
Cairo.....	57.8	+0.1	91	July 13	6	Feb. 23	37.74	-6.16	86	Philadelphia.....	52.2
Chicago.....	48.8	+0.1	90	July 9	-11	Feb. 23	34.95	-1.29	96	Sandusky.....	49.9
Springfield.....	52.2	-0.9	91	July 13	-5	Feb. 23	33.31	-8.23	80	Toledo.....	49.8
Indiana.										Oregon.	54.8
Indianapolis.....	53.1	+0.8	92	July 2	-1	Feb. 23	36.41	-6.59	85	Portland.....	54.8
Iowa.										Roseburgh.....	54.6
Davenport.....	49.9	+0.6	92	Aug. 29	-12	Feb. 23	37.61	+2.38	107	Pennsylvania.	54.6
Des Moines.....	49.9	+1.0	93	Aug. 29	-13	Feb. 23	25.90	+11.60	69	Erie.....	48.7
Dubuque.....	48.7	+1.3	95	July 18	-16	Feb. 23	24.25	-13.93	64	Philadelphia.....	54.8
Keokuk.....	51.9	+0.4	93	Aug. 29	-8	Feb. 23	34.75	-1.88	95	Pittsburgh.....	53.4
Kansas.										Rhode Island.	49.8
Concordia.....	52.8	+1.3	97	July 17	-7	Feb. 23	34.47			Block Island.....	50.3
Dodge City.....	54.3	+1.2	105	July 27	-8	Feb. 18	19.17	-1.75	91	South Carolina.	52.2
Leavenworth.....	53.9	+0.4	93	July 21	-5	Feb. 23	40.93	+2.30	106	Charleston.....	65.6
Kentucky.										South Dakota.	65.6
Lexington.....	55.0		90	July 10	6	Feb. 6	41.50			Fort Sully.....	46.5
Louisville.....	56.8	-0.5	93	June 20	6	Feb. 6	35.02	-12.65	73	Huron.....	44.3
Louisiana.										Yankton.....	45.6
New Orleans.....	68.8	-0.6	95	July 21	32	Feb. 7	48.45	-16.44	75	Tennessee.	59.1
Shreveport.....	65.9	-0.5	96	July 27	25	Jan. 27	46.17	-6.37	88	Chattanooga.....	60.4
Maine.										Knoxville.....	58.2
Eastport.....	43.5	-1.9	83	Sept. 2	-12	Feb. 24	42.26	-8.38	83	Memphis.....	62.2
Portland.....	46.4	-0.2	92	May 10	-8	Feb. 24	41.92	-0.23	99	Nashville.....	59.1
Maryland.										Texas.	63.3
Baltimore.....	55.8	+0.2	93	May 10	3	Feb. 24	62.35	+19.19	144	Abilene.....	54.8
Massachusetts.										Brownsville.....	73.0
Boston.....	50.7	+1.9	91	May 10	-1	Feb. 24	39.82	-7.00	85	Corpus Christi.....	69.9
Nantucket.....	49.9		80	Aug. 22	4	Feb. 24	57.99			El Paso.....	64.1
Wood's Holl.....	49.8		79	July 8	2	Feb. 24	46.11	+2.00	105	Galveston.....	69.3
Michigan.										Palestine.....	66.2
Alpena.....	42.2	+1.5	91	May 18	-14	Feb. 24	31.32	-6.05	84	Rio Grande City.....	73.6
Detroit.....	48.7	-0.3	91	July 10	-8	Feb. 23	21.06	-12.25	63	San Antonio.....	67.8
Lansing.....	47.2		93	Aug. 30	-11	Feb. 24	24.21			Utah.	52.7
Marquette.....	41.6	+1.8	88	Aug. 28	-21	Feb. 23	30.31	-2.43	93	Salt Lake City.....	52.7
Port Huron.....	46.1	+1.3	91	July 9	-13	Feb. 24	22.22	-10.59	68	Vermont.	42.7
Minnesota.										Northfield.....	50.0
Duluth.....	40.9	+2.3	86	Aug. 29	-30	Feb. 23	32.04	-0.48	99	Lynchburgh.....	57.2
Moorhead.....	40.2	+3.2	96	Aug. 30	-35	Feb. 5	17.07	-8.54	67	Norfolk.....	59.1
Saint Paul.....	45.0	+1.0	96	July 7	-25	Feb. 23	16.96	-11.51	60	West Virginia.	59.1
Saint Vincent.....	37.3	+3.9	95	Aug. 30	-43	Feb. 23	14.44	-2.43	86	Parkersburg.....	53.5
Mississippi.										Washington.	51.9
Vicksburg.....	65.9	-0.1	94	Sept. 14	24	Feb. 7, 24	41.30	-17.45	70	Fort Canby.....	51.9
Missouri.										Olympia.....	51.7
Saint Louis.....	56.0	-0.3	93	June 20	0	Feb. 23	33.16	-5.54	86	Port Angeles.....	47.6
Springfield.....	55.6	-0.2	92	July 13, 18	1	Feb. 6	47.96			Walla Walla.....	54.3

86 •January 16, 19, 20, 23, 24, and February 17, 18. †June 26; July 25; August 19, 25; September 11.

The following table contains all annual meteorological summaries for 1889, furnished by voluntary observers, and such other summaries of the reports of voluntary observers as could be prepared in this office in time for this publication:

Annual summary for 1889—Voluntary stations.

State and station.	Temperature—degrees Fahrenheit.						Precipitation in inches.	
	Mean annual.	Departure from normal.	Extremes for 1889.				Total for 1889.	Departure from normal.
			Max.	Month.	Min.	Month.		
Alabama.	o	o	o	o	o	o	Inches.	Inches.
Auburn	63.5	61.8	94	July	20	Feb.	44.97	50.32
Bermuda	67.8	94	July	20	Feb.	30.94		
Decatur	64.7	94	June	20	Feb.	49.82		
Greensborough	64.7	94	July	20	Feb.	35.68		
Livingston	63.1	94	July	20	Feb.	39.38		
Mount Vernon Barracks	65.9	100	July	22	Feb.	44.07		
Motes	62.7	92	June, July	11	Feb.	53.88		
Tuscumbia	60.1	92	July, Aug.	15	Feb.	43.78		
Uniontown	66.0	95	June	4	Feb.	40.28		
Valley Head	57.0	95	July	7	Feb.	50.32		
Arizona.								
Benson	67.6	102	July	24	Feb.	7.78		
Casa Grande	75.0	115	July	35	Jan.			
Fort Apache	55.0	102	July	5	Feb.	13.90		
Fort Bowie	61.2	101	July	14	Feb.	11.56		
Fort Huachuca	60.4	96	July	21	Feb.	15.39		
Fort Lowell	61.1	111	July	22	Feb.	16.92		
Fort McDowell	69.6	117	July, Aug.	25	Jan.	13.67		
Fort Mojave	70.6	120	July	28	Feb.	21.38		
Fort Verde	60.9	116	Aug.	14	Feb.	16.06		
Florence	63.6	111	July	25	Feb.			
Holbrook	57.1	100	July	7	Jan.	7.63		
Huachuca Mountains	109	Aug.	19	Dec.	15.87			
Maricopa	71.0	115	July, Aug.	37	Jan.			
Pantano	65.4	111	July	27	Jan.	15.59		
San Carlos								
Texas Hill	74.8	113	June	39	Feb.	13.06		
Teviston								
Tucson	68.3	105	July	29	Feb.	18.35		
Williams	45.6	91	June	0	Jan.			
Wilcox	65.9	105	July	25	Jan.			
Arkansas.								
Arkansas City	60.6	94	July	19	Feb.	38.18		
Conway								
Cromden	94	July	23	Feb.	56.03			
Forrest City	63.4	95	June	19	Jan., Feb.	50.36		
Helena	57.5	98	July	15	Feb.	45.15		
Hot Springs	98	July	14	Feb.	50.79			
Lead Hill	59.8	+ 2.2	107	June	10	Feb.	45.76	-13.94
Little Rock Barracks	62.1	97	Aug.	17	Feb.	50.79		
Lonoake	63.0	97	July	19	Feb.	49.01		
Newport	98	July	19	Feb.	50.94			
Ozone	57.9	91	July	9	Jan.	49.60		
Stuttgart	60.9	95	July	16	Feb.	40.74		
Texarkana	64.9	105	July	20	Jan.			
Washington	63.6	98	July	20	Feb.	47.35		
Colorado.								
Canon City	53.9	102	July, Aug.	1	Feb.	12.53		
Climax								
Delta	47.9	105	July, Aug.	0	Jan.	20.15		
Durango								
Fort Collins	46.4	97	July, Aug.	-16	Feb.	14.58		
Fort Crawford	49.6	99	June	-10	Jan.	20.27		
Fort Lewis	43.7	86	July	-18	Feb.	21.81		
Fort Logan	50.5	101	July	2	Jan.			
Georgetown	42.9	84	July	2	Feb.	14.39		
Greeley	48.4	99	July	-11	Feb.	14.58		
Gunnison	38.1					10.02		
Husted	99	Aug.	-10	Jan.	14.65			
Leadville	35.4	77	July	-9	Jan., Feb.	12.80		
Monte Vista	41.1	93	July	-25	Feb.	5.72		
Palmer Lake						22.30		
Ridge Falls						14.38		
Rocky Ford	51.2	104	July	-11	Jan.			
Thon	46.1	95	July			12.75		
T. S. Ranch	51.7	95	June, Aug.			8.71		
Connecticut.								
Canton		92	May	-8	Feb.	54.26		
Clarks Falls						60.42		
Colchester	49.6	88	May	-3	Feb.	50.42		
Fort Trumbull	51.8	93	July	2	Feb.	47.11		
Hartford	49.7	93	Sept.	-2	Feb.	55.09		
Mansfield	47.6	86	June, July	-6	Feb.	50.26		
Middletown	49.3	+ 1.9	{ June ..	0	Feb.	50.27	+ 11.44	
New Hartford	43.4	92	June	-10	Feb.	54.47		
Shelton	49.5	89	May	1	Feb.	61.13		
Southington	49.5	97	Sept.	-3	Feb.	54.64		
Thompson	47.8	89	May	-7	Feb.	52.78		
Voluntown	49.9	86	June, July	-2	Feb.	59.45		
Waterbury	49.2	90	May, June	-2	Feb.	55.86		
Wallingford						63.12		
California.								
Alameda	66.4	114	July	29	Feb.	25.99		
Alcatraz Island	55.6	88	Sept.	38	Feb.	37.25		
Almaden	62.4	97	Sept.	31	Jan.	32.74		
Anaheim	66.2	104	July	34	Jan.	24.52		
Anderson	64.6	110	July	27	Feb., Dec.	61.91		
Angel Island	59.1	95	Sept.	30	Feb.	35.36		
Aptos	58.0	86	Sept.	30	Jan.	37.94		
Athlone	65.7	114	July, Aug.	26	Feb.			
Auburn	62.0	100	June	27	Jan.	38.97		
Bartow	65.3	112	July	19	Jan.	6.23		
Beaumont	64.7	113	July	30	Feb.	22.59		

Annual summary for 1889—Voluntary stations.

State and station.	Temperature—degrees Fahrenheit.						Extremes for 1889.				Precipitation in inches.		
	Mean annual.	Departure from normal.	Extremes for 1889.				Max.	Month.	Min.	Month.	Inches.	Inches.	
			Max.	Month.	Min.	Month.							
California—Continued.	o	o	o	o	o	o	o	July	28	Feb.	7.03	7.03	
Bakersfield	69.2	102	Sept.	28	Feb.	29.06	o	Sept.	28	Feb.	31.97	31.97	
Benicia Barracks	59.4	87	Sept.	28	Feb.	25.10	55.7	July	30	Jan.	24.93	24.93	
Berkeley	55.7	114	July	30	Jan.	22.97	64.5	July	26	Feb.	31.25	31.25	
Borden	65.8	105	Aug., Sept.	30	Jan.	22.97	64.4	July	26	Feb.	22.97	22.97	
Brentwood	65.8	108	July	39	Feb.	32.77	65.0	July	39	Feb.	39.04	39.04	
Brighton	64.4	108	July	39	Feb.	32.77	79.2	July, Aug.	28	Jan.	10.59	10.59	
Caliente	67.1	112	July	21	Feb.	30.42	58.8	July	21	Feb.	49.31	49.31	
Calistoga	58.8	104	Sept.	32	Jan., Feb.	26.86	57.2	Aug.	27	Feb.	29.82	29.82	
Castroville	57.2	115	July	32	Feb.	30.80	65.6	July	27	Jan.	24.41	24.41	
Chico	65.6	108	July	32	Jan.	22.91	47.4	July	27	Jan.	68.00	68.00	
Cisco	47.4	102	July	22	Feb.	26.86	59.1	July	22	Feb.	69.09	69.09	
Colfax	59.1	114	July	22	Feb.	26.86	66.1	July	22	Feb.	18.13	18.13	
Colton	66.1	104	July	22	Feb.	26.86	Corning	64.8	July	30	Jan., Feb.	33.40	33.40
Colegrove	65.0	111	July	30	Jan., Feb.	27.09	Davis	63.6	July	27	Feb.	30.42	30.42
Cornings	63.6	107	Aug., Sept.	27	Feb.	30.42	Delano	68.4	July	25	Feb.	8.11	8.11
Delano	68.4	112	July	24	Feb.	30.42	Delta	60.8	Sept.	24	Feb.	111.05	111.05
Downey	64.1	109	Sept.	29	Feb.	30.42	Dunnigan	63.7	July	27	Jan.	29.91	29.91
Dunsmuir	54.0	115	July	22	Jan.	22.91	El Dorado	63.5	July	27	Feb.	47.04	47.04
El Dorado	63.5	110	July	28	Feb.	30.42	Elmira	65.0	July	28	Feb.	26.63	26.63
Emigrant Gap	49.7	100	July	10	Feb.	20.19	Ensign	58.8	Sept.	28	Jan., Feb.	23.93	23.93
El Verano	58.8	102	Sept.	28	Jan., Feb.	23.93	Evergreen						
Esperanza	63.1	108	July, Sept.	28	Jan., Feb.	23.93	Farmington	63.5	July	28	Feb.	20.19	20.19
Farmington	63.5	104	July	27	Jan.	24.41	Florence	64.0	July	27	Jan.	33.98	33.98
Folsom	64.7	109	July	27	Jan.	23.98	Fort Bidwell	50.2	July	2	Jan.	23.39	23.39
Fort Mason	55.6	112	Aug.	29	Jan.	23.39	Fort Verde	57.0	Sept.	37	Feb.	35.23	35.23
Fresno	71.0	113	July	28	Feb.	28	Fruto	66.6	Sept.	28	Jan., Feb.	33.38	33.38
Gilroy	59.5	103	Sept.	28	Jan., Feb.	23.38	Girard	59.8	Aug.	26	Jan., Feb.	26.86	26.86
Goshen	67.2	110	July	23	Feb.	21.23	Goshen	67.2	July	23	Feb.	11.54	11.54
Hollister	60.6	101	Aug., Sept.	29	Jan., Feb.	19.23	Hollister						
Ione	61.5	104	July	24	Jan.	20.23	Keene						

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Temperature—degrees Fahrenheit.						Precipitation in inches.	
	Mean annual.	Departure from normal.	Extremes for 1889.				Total for 1889.	Departure from normal.
			Max.	Month.	Min.	Month.		
California—Continued.	o	o	o	Sept.	30	Jan., Feb.	Inches.	Inches.
Soquel.	60.4	92	Sept.	30	21.71	Feb.		
South Side.	61.4	106	July, Aug.	26	27.16			
South Vallejo.	55.6	83	Sept.	31	27.16			
Spadra.	62.5	109	Aug.	31	28.22			
Suisun.	61.9	103	Aug.	32	28.22			
Summit.	43.4	98	Aug.	—1	2	Feb.		
Susanville.	52.8	110	July	2	29.84			
Tehachapi.	57.3	100	July	18	29.84			
Tehama.	65.8	115	July	34	Jan.	39.26		
Templeton.	60.0	108	July	23	Feb.	32.01		
Towles.	58.0	98	July	12	Feb.			
Tracy.	61.8	108	July, Aug.	29	Feb.	17.86		
Traver.	66.0	111	July	24	Jan., Feb.	13.65		
Tropico.	62.4	103	July	26	Feb.			
Tulare.	68.3	113	July	30	Jan., Feb.	11.71		
Turlock.	65.0	107	Aug.	30	Feb.	17.41		
Vacaville.	62.2	107	Aug.	30	Dec.	35.95		
Valley Springs.	64.2	101	July	30	Jan., Feb.	26.80		
Volcano Springs.	78.1	126	July, Aug.	30	Jan.			
Westley.	67.2	105	July, Aug.	31	Jan.			
Wheatland.	61.2	106	July			26.19		
Whittier.	67.3	109	Sept.	39	Jan., Dec.			
Willow.	61.8	110	July	30	Feb.	26.12		
Winters.	67.5	110	July	30	Feb.	35.18		
Woodland.	60.2	100	July	29	Jan.			
Dakota.								
Davenport.	41.6	96	July	—38	Feb.	14.97		
Fort Abraham Lincoln.	41.9	104	Aug.	—30	Feb.	10.26		
Fort Bennett.	46.1	108	July, Aug.	—27	Feb.			
Fort Buford.	42.8	104	June	—34	Feb.	8.45		
Fort Meade.	45.9	100	Aug.	—20	Feb.	18.00		
Fort Pembina.	38.2	97	July, Aug.	—43	Feb.	11.75		
Fort Randall.	49.2	105	July	—24	Feb.	12.02		
Fort Sully.	48.4	108	July	—22	Feb.	16.45		
Fort Totten.	41.4	98	Sept.	—36	Feb.	10.55		
Fort Yates.		107	Aug.	—26	Feb.	13.68		
Gallatin.	37.4	102	July	—44	Feb.			
Kimball.	42.9	99	June, Aug.	—24	Feb.	17.74		
New England City.	40.6	104	June	—33	Feb.	9.55		
Parkston.	43.9	100	July	—28	Feb.	22.65		
Spearfish.	48.4	101	June	—16	Feb.	21.87		
Webster.	44.2	100	Aug.	—33	Feb.	38.02		
Wolsey.	42.6	105	July	—34	Feb.	18.88		
Woonsocket.	43.6	104	July	—30	Feb.	16.68		
Delaware.								
Kirkwood.	52.8			4	Feb.			
Florida.								
Altamonte Springs.	70.2	95	July	34	Jan.	56.53		
Alva.	71.6	99	June, July	35	Nov.	56.36		
Fort Barrancas.			{ May ..		62.63			
Fort Meade.	68.1	91	{ June ..		32	Jan.	43.36	
Homeland.	72.2		{ July ..				38.60	
Manatee's Island.	71.7	93	June, Aug.	36	Nov.	53.44		
Merritt's Island.	70.5	—1.2	93	May	38	Jan.	57.89	+ 1.40
St. Francis Barracks.	68.1						41.22	
Tallahassee.								
Villa City.	70.6	95	July	35	Jan.	56.15		
Georgia.								
Andersonville.	68.9	108	Aug.	19	Feb.	42.96		
Athens.		94	May, July	15	Feb.			
Forsyth (near).	65.9	+ 0.8	95	July	20	Feb.	58.12	+ 6.74
Marietta.	58.8	91	July	13	Feb.	52.68		
Milledgeville.	62.6	95	July	18	Feb.	44.76		
Quitman.					28	Feb.		
Idaho.								
Boise Barracks.	51.2	102	July	2	Jan.	8.12		
Fort Sherman.	48.6	94	July	2	Dec.	18.41		
Lewiston.	55.0	101	July	10	Jan.	10.73		
Illinois.								
Bearson.	50.3	94	May	—6	Feb.	34.54		
Belvidere.	47.4	97	June	—15	Feb.	23.80		
Centralia.	54.7	96	July	—6	Feb.	40.16		
Collinsville.	55.0	94	July	—1	Feb.			
Dwight.		98	Aug.	—12	Feb.	35.83		
Golconda.	57.2	92	June, July	8	Feb.	41.18		
Grand Tower.						37.85		
Greenville.	53.2	95	July	—1	Feb.	37.37		
Griggsville.	53.3	94	May, June	—4	Feb.			
Hennepin.		96	July	—7	Feb.	31.42		
Lacon.	51.2	94	Aug.	—8	Feb.	30.67		
Lake Forest.	46.1	97	July, Aug.	—13	Feb.	31.50		
Lanark.	48.7	92	Aug.	—12	Feb.	31.17		
Mattoon.	52.2	96	July	—2	Feb.	38.62		
Olney.	53.0	95	July	—3	Feb.	46.27		
Oneida.	50.4	98	Aug.	—10	Feb.	28.31		
Oswego.	47.5	94	Aug.	—12	Feb.	28.58		
Ottawa.	50.2	93	July, Sept.	—11	Feb.	34.27		
Palestine.	54.0	92	July	—1	Feb.	38.04		
Pana.	55.0	94	July	—4	Feb.	42.92		
Pekin.	52.7	96	June, July	—10	Feb.	36.08		
Peoria.	52.9	94	July	—5	Feb.	35.05		
Philo.	51.3	96	June	—5	Feb.	39.54		
Pontiac.	50.6	98	Aug.	—8	Feb.	28.12		
Riley.	46.2	91	Aug.	—15	Feb.	24.52		
Rockford.	47.6	92	July, Aug.	—14	Feb.	29.88		
Rock Island Arsenal.	50.1	92	Aug.	—11	Feb.	41.63		
Sycamore.	51.4	95	July	—10	Feb.	31.15		
Watseka.	46.8	93	July	—11	Feb.	24.96		
White Hall.	49.6	95	July	—7	Feb.	36.69		
	\$4.8	94	Aug.	—2	Feb.	39.13		

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Temperature—degrees Fahrenheit.						Precipitation in inches.	
	Mean annual.	Departure from normal.	Extremes for 1889.				Total for 1889.	Departure from normal.
			Max.	Month.	Min.	Month.		
Illinois—Continued.	o	o	o	Aug.	—16	Feb.	28.05	.....
Winnebago.	48.8	98	Aug.	—10	Feb.	32.86	.....
Indiana.	50.4	97	July	—4	Feb.	38.46	.....
Blue Lick.	54.8	90	May	4	Feb.	40.63	.....
Butlerville.	53.7	90	June, July	8	Feb.	36.37	.....
Cannelton.	55.1	95	June, July	2	Feb.	33.26	.....
Columbus.	52.5	90	July, Aug.	—1	Feb.	30.38	.....
Columbia City.	48.0	93	July, Sept.	1	Feb.	31.79	.....
Connerville.	52.4	93	Aug., Sept.	—4	Feb.	31.83	.....
Dana.	52.1	88	June, July	7	Feb.	42.99	.....
De Gonia Springs.	55.1	92	July	—3	Feb.	33.19	.....
Delphi.	49.8							
Evansville.								
Farnland.	52.0	94	Sept.	2	Feb.	44.39	.....
For Sheridan.	46.2	95	Aug.	—17	Feb.			
Franklin.	52.3	94	July	4	Feb.	35.41	.....
Huntingburgh.	55.8	94	July	—4	Feb.	53.67	.....
Huntington.								
Jeffersonville.	55.9	92	June, July	7	Feb.	35.51	.....
Lafayette.	50.2	95	July	—8	Feb.	34.41	— 4.06	
Logansport.	56.8	93	Aug.	—9	Feb.	65.17	.....
Marengo.	49.9	92	July	—1	Feb.	23.00	.....
Marion.	49.9	96	July	3	Feb.	36.90	.....
Mauzy.	48.9							
Mount Carmel.								
Mount Vernon.	55.0	94	July	5	Feb.	43.30	.....
Muncie.	52.0	96	July	0	Feb.			
Princeton.	54.8	96	July	2	Feb.	44.10	.....
Richmond.	49.7	91	July, Sept.	1	Feb.	35.04	.....
Rockville.	52.5	94	July, Sept.	—4	Feb.	42.55	.....
Rushville.								
Scatesville.	57.0	94	May	6	Feb.	45.55	.....
Seymour.	52.8	90	May	4	Feb.	40.24	.....
Spiceland.	52.8	94	July	0	Feb.	39.12	.....
Sunman.	51.7	92	July	1	Feb.	40.35	.....
Vevay.	55.2	— 0.2	94	{ July ..	5	Feb.	40.25	— 3.01
Vincennes.				{ Sept ..				
Worthington.	51.8	88	May	0	Feb.	48.02	.....
Indian Territory.								
Caddo Creek.	63.3	98	Aug.	5	Jan.			
Eufaula.								
Fort Gibson.	60.3	100	July	8	Jan.	34.54	.....
Fort Reno.	59.6	103	July	6	Feb.	33.09	.....
Fort Supply.	57.6	111	July	—1	Feb.	31.91	.....
Iowa.								
Amana.	47.7	94	July	—14	Feb.	27.75	.....
Ames.	49.9	94	Aug.	—16	Feb.	24.19	.....
Bancroft.	54.5	95	July	—24	Feb.	13.66	

Annual summary for 1889—Voluntary stations—Continued.

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	Mean annual.	Departure from normal.	Extremes for 1889.				Total for 1889.	Departure from normal.
			Max.	Month.	Min.	Month.		
Kansas—Continued.								
Halstead	54.7	0	96	July	-6	Feb	30.05	
Havensville	52.0	99	July	-14	Feb	42.60		
Independence	56.1	101	July	-4	Feb	44.55		
Junction City							38.97	
Kirwin							26.27	
Le Harpe	51.0							
Lawrence	53.3	-0.2	94	July	-4	Feb	45.22	+10.26
Lebo	54.3	99	July	-6	Feb	43.80		
Lisbon	55.1	108	July				14.94	
Macksville	54.1	100	July	-10	Feb	25.72		
Manhattan (1)	51.8						36.87	
Manhattan (2)	48.2							
Monument	50.7	108	July	-10	Feb	33.66		
Morse	50.2	90	{ May { June { July	-10	Feb	19.20		
Oakley	50.3	106	July, Aug.	-5	Feb	19.60		
Oberlin								
Oiterlo	54.0							
Rome	56.6	100	July	-6	Feb	39.18		
Salina	56.6	98	July	-4	Feb	32.70		
Sedan	56.6	103	July	-2	Feb	52.89		
Seneca	52.1	95	Sept	-16	Feb	27.05		
Topeka	52.8						38.96	
Toronto	57.0						35.21	
Tribune	51.5	105	July	-15	Feb	16.12		
Wakefield		100	July	-8	Feb	36.29		
Wallace								
Wellington	55.8	+1.3	98	Aug	-5	Feb	38.16	+6.11
Wilson	54.4	101	July	-5	Feb	25.70		
Yates Centre	53.8	96	July	-6	Feb	35.20		
Kentucky.								
Ashland	50.0							
Bowling Green	59.9	94	July	4	Feb	36.76		
Caitletsburgh							40.42	
Eddyville							35.72	
Falmouth	52.5	92	July	8	Feb	37.60		
Frankfort (1)	54.5	96	Aug	7	Feb	44.27		
Frankfort (2)							41.36	
Franklin	58.7	92	Sept	21	Jan., Feb.	44.68		
Greensburg							44.30	
Mount Sterling	53.0	90	July	8	Feb	38.89		
Newport Barracks	54.1	98	Sept	6	Feb	37.33		
Owenton	54.6	94	July	3	Feb	38.70		
Paducah							36.30	
Pelville							36.59	
Richmond	56.4	98	July	5	Feb	39.59		
Shelbyville	55.0	95	Aug	6	Feb			
South Fork.	55.4	90	July	8	Feb			
Louisiana.								
Abbeville	67.7	90	July	32	Jan	39.53		
Alexandria	67.5	97	July			37.84		
Anite City	66.6	94	July			48.01		
Baton Rouge						31 Jan., Feb.	40.61	
Cameron							42.00	
Clinton	64.6	99	July	21	Jan	38.22		
Coushatta Chute							44.54	
Crowley	66.8	98	July	27	Jan	41.70		
Delhi							44.62	
Donaldsonville							38.92	
Farmeriville	64.3	94	July, Aug.	26	Jan., Feb.	34.29		
Girard							38.32	
Grand Cane								
Grand Coteau	67.9	-0.7	95	July	21	Jan	45.56	
Hammond	63.9	93	July	33	Jan	44.91	-20.59	
Houma	67.2	97	July	26	Nov	43.60		
Kenner		94	July	31	Dec	54.27		
Lake Charles	68.5						52.90	
Liberty Hill	65.7	100	Aug	30	Dec	36.37		
Luling							44.96	
Mandeville	68.3	98	July			34.62		
Marksville	65.2	95	July	28	Nov	19.55		
Maurepas	67.0	97	July	28	Nov	38.86		
Melville		96	July	27	Dec	36.70		
Minden						22 Jan., Feb.	27.73	
Monroe	64.8	99	July	25	Feb	43.43		
Mount Airy	67.7	96	July	33	Jan	35.26		
New Iberia		95	July, Oct	32	Jan., Nov	36.99		
Plaquemine	65.2	97	Sept	23	Dec	40.35		
Port Eads	69.7	92	July			41.06		
Shell Beach	69.0	93	July	32	Jan	34.80		
Thibodeaux						41.34		
Vidalia	67.6	100	{ Aug { Sept	24	Feb	33.01		
Maine.								
Bar Harbor	46.7	87	June	-9	Feb	42.19		
Belfast	46.0	82	June	-9	Feb			
Cornish	46.4	91	May	-14	Feb	42.96		
Fairfield	43.8	91	May	-37	Feb	35.73		
Gardiner	45.9	93	May	-16	Feb	41.55		
Kent's Hill	45.2	87	May	-17	Feb	45.32		
Lewiston	44.9	92	June	-23	Feb	47.31		
Orono	45.1	89	May	-20	Feb	42.94		
Petit Menan	43.9			-5	Feb			
West Jonesport	43.8	80	July, Aug.					
Maryland.								
Barren Creek Springs	56.0	89	{ May, June { July, Aug.	11	Feb	63.21		
Cumberland	52.4	+2.5	90	May	0	Feb	40.17	+8.15
Fort McHenry	55.5		90	May, June	3	Feb	66.38	
Frederick	54.1	92	July	3	Jan	51.83		

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			Max.	Month.	Min.	Month.		
Maryland—Continued.								
Gaithersburgh	49.6	0	0	Feb	-5	Feb		
Glenelga	54.9	0	0	Feb	6	Feb	59.96	
Jewell	55.7	89	July	1	Feb	57.70		
McDonogh Institute	53.8						59.91	
Massachusetts.								
Amherst (1)	49.3	+1.3	90	May	-9	Feb	47.30	+5.16
Amherst (2)	47.8	90	May	-9	Feb	43.82		
Amherst (3)	49.4	90	May	-6	Feb	46.11		
Blue Hill (summit)	47.3	89	May	-6	Feb	54.60		
Blue Hill (base)	49.0	90	May	-4	Feb	55.30		
Blue Hill (valley)	49.0	92	May	-4	Feb	54.39		
Brewster	50.7	88	July	5	Feb	48.67		
Cambridge (1)	49.1						43.75	
Cambridge (2)	49.9	92	May	-4	Feb	56.21		
Chestnut Hill	49.9	84	June	-2	Feb	42.04		
Clinton								
Cotuit	49.6	84	June	-2	Feb	48.45		
Deerfield (1)	48.9	92	May	-9	Feb	32.12		
Fall River	50.0	85	June	-2	Feb	62.54		
Fiskedale								
Fitchburg (1)	47.7						45.76	
Fitchburg (2)	48.1	89	May	-1	Feb	44.55		
Fort Warren	49.0	93	May	-5	Feb	53.08		
Framingham	49.9	93	May	-7	Feb			
Gilbertville	47.9	89	June	-10	Feb	53.03		
Groton (1)	49.1	91	May	-4	Feb	45.28		
Holyoke	50.9	94	June	-8	Feb			
Lake Cochituate	49.1	97	May	-7	Feb	49.99		
Lawrence	49.4	96	May	-7	Feb	48.07		
Leicester	46.4	89	May, June	-9	Feb	45.67		
Leominster								
Long Plain								
Lowell (1)	48.8						61.28	
Lowell (2)	48.9	90	May, June	-8	Feb	46.77		
Ludlow	46.6	90	May, June	-6	Feb	48.89		
Lynn	48.6	85	May	-1	Feb	55.99		
Mansfield	48.8	89	June	-7	Feb	59.04		
Medford							51.02	
Middleborough	49.1	87	June	-4	Feb	51.50		
Milton	48.8	88	May, June	-1	Feb	53.79		
Mystic Lake							51.54	
Mystic Station							50.99	
New Bedford (1)	49.5						52.71	
New Bedford (2)	49.7	83	July	-5	Feb	52.99		
Newburyport (1)	48.8	+2.2	92	May	-4	Feb	52.00	+6.95
North Billerica								
Northampton	50.0	95	June	-6	Feb	53.56		
Plymouth	51.8	85	May, June	0	Feb	49.04		
Princeton	46.1	90	May	-12	Feb	50.92		
Randolph							52.79	
Royalston								
Salem (1)	50.0	90	May	-1	Feb	57.95		
Somerset	52.0	+2.5	96	June	-6	Feb	46.40	+11.00
South Hingham								
Springfield	50.6						45.40	
Taunton (1)	50.0						50.83	
Taunton (2)	49.8						57.33	
Taunton (3)	49.3						57.04	

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Temperature—degrees Fahrenheit.				Precipitation in inches.	
	Mean annual.	Extremes for 1889.			Total for 1889.	Departure from normal.
		Max.	Month.	Min.		
<i>Michigan—Continued.</i>						
Hastings	47.3	91	July	-12	Feb.	23.32
Highland Station	46.6	98	July	-15	Feb.	21.74
Hillman	42.3	95	July, Aug.	-17	Feb.	24.58
Hillsdale	47.5	90	May	-10	Feb.	23.19
Hudson	46.5	92	July	-10	Feb.	27.09
Ivan	42.8	94	Aug.	-10	Feb.	26.59
Jeddo	49.1	95	July	-14	Feb.	20.95
Kalamazoo	48.9	+ 1.3	July, Aug.	-11	Feb.	28.50
Lansing	47.3	91	Aug.	-15	Feb.	22.74
Lathrop	40.6	102	July	-33	Feb.	28.38
Madison	46.1			-8	Feb.	26.23
Marshall	48.7	94	July	-8	Feb.	28.78
Montague	44.5	90	Sept.	-12	Feb.	25.94
Mottville	47.8	92	Sept.	-10	Feb.	23.81
North Aurelius						26.92
North Marshall	46.2	90	Aug., Sept.	-10	Feb.	25.77
Olivet	46.0	90	{ June .. } (Sept.)	-14	Feb.	25.61
Ovid	45.5	93	July	-18	Feb.	22.90
Pontiac	48.2	86	July	-10	Feb.	22.62
Paw Paw	47.0	94	Aug.	-19	Feb.	35.13
Pulaski	46.9			-4	Feb.	24.27
Rosecrans	41.8	96	July	-33	Feb.	26.04
Saint Johns	46.3	92	July, Aug.	-12	Feb.	24.88
Stanton	45.7	93	Aug.	-20	Feb.	26.98
Stockbridge				15.62		
Thornville	48.3	+ 0.9	July, Sept.	-23	Feb.	24.56
Traverse City	44.6			-10	Feb.	28.77
Vandalia	45.1					33.19
Vienna						25.58
Washington	45.2	90	July	-19	Feb.	23.15
Weldon Creek						16.98
West Branch	42.4	91	July			15.87
Williamston	48.2	90	Aug.	-12	Feb.	27.33
Ypsilanti School	48.4					25.01
Ypsilanti	46.5					29.46
<i>Minnesota.</i>						
Alexandria						
Farmington	45.1	100	July	-26	Feb.	23.07
Fergus Falls						14.86
Fort Ripley						17.77
Fort Snelling	44.8	100	July	-29	Feb.	14.81
Grand Meadow	43.6	99	Aug.	-30	Feb.	21.30
Lake Winnibigosh. Dam.	39.4	91	June	-40	Feb.	19.16
Le Sueur	45.4	95	July	-26	Feb.	18.36
Mankato	45.7	95	July	-25	Feb.	18.36
Minneapolis	44.4	+ 2.7	99	July	-26	-12.12
Morris	45.1	94	Aug.	-36	Feb.	18.30
Northfield	44.4			-27	Feb.	20.63
Ortonville						17.74
Pine River Dam	39.7	96	July	-44	Feb.	20.86
Pokegama Falls						25.65
Red Wing	44.6			-25	Feb.	18.98
Redwood Falls						16.12
Rolling Green	44.1			-24	Feb.	15.81
Tracy						10.14
<i>Mississippi.</i>						
Agricultural College						
Batesville	62.5	100	July	15	Feb.	44.97
Canton						41.57
Kosciusko						34.08
Lock Leaven						22.49
Logtown	67.2	98	July	28	Jan., Nov.	38.36
Louisville	64.6	94	July	29	Nov.	47.91
Pearlington	67.8	102	Sept.	18	Nov.	38.94
Pontotoc	60.8	94	July, Sept.	29	Nov.	46.53
Summit						41.23
University	62.1	93	June, July	19	Feb.	41.23
Water Valley						42.87
Waynesborough	62.9					37.33
Yazoo City						36.94
<i>Missouri.</i>						
Excelsior Springs	51.4	97	July	-7	Feb.	39.84
Fayette	54.6					42.56
Frankford						43.16
Glasgow	52.8	99	July	-8	Feb.	42.07
Grand Pass	53.0	94	July	4	Jan.	40.21
Harrisonville	53.0	97	July	-7	Feb.	42.49
Hermann						39.69
Ironotn	56.8	91	July	4	Feb.	43.65
Jefferson Barracks	53.1	100	Aug.	-10	Feb.	30.00
Kansas City	54.8	98	July			42.24
New Frankfort						
New Haven	59.5					40.85
Oregon	52.5					29.82
Princeton	55.2	99	Aug.	-6	Feb.	32.25
Saint Charles (1)						31.93
Saint Charles (2)	53.1					
Sedalia	56.8	100	July, Aug.	-7	Feb.	37.74
Shelbyville						42.26
Warrensburg	52.2					41.41
Withers Mill						38.43
<i>Montana.</i>						
Camp Poplar River	41.6	103	June	-35	Feb.	13.32
Galpin						6.72
Custer Station						1.78
Fort Assiniboine	44.7	99	June	-29	Feb.	9.40
Fort Custer	46.0	100	June, Aug.	-24	Feb.	7.51
Fort Keogh	45.3	104	June	-25	Feb.	9.94
Fort Maginnis	47.2	96	June, Aug.	-23	Feb.	14.00
Fort Missoula	43.6	96	July	-21	Jan.	9.15

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Temperature—degrees Fahrenheit.				Precipitation in inches.		
	Mean annual.	Extremes for 1889.			Total for 1889.	Departure from normal.	
		Max.	Month.	Min.			
<i>Montana—Continued.</i>							
Fort Shaw	46.6	+ 1.4	95	June, July	-22	Jan.	4.95
Sheldon			95	June	-17	Jan.	5.36
Virginia City	43.8		92	June, July	-11	Feb.	7.08
<i>Nebraska.</i>							
Ansley	47.9		105	July	-9	Feb.	19.76
Ashland			98	July	-20	Feb.	33.40
Crete	51.0		95	July	-16	Feb.	29.06
Creighton	45.6		102	July	-27	Feb.	23.55
Culbertson							20.62
David City							23.34
De Soto	50.0		95	July	-11	Feb.	20.42
Fairbury			90	July	-6	Feb.	27.78
Falls City	52.0		97	July	-12	Feb.	30.93
Fort Niobrara	46.3		110	July	-16	Feb.	18.16
Fort Robinson	48.9		106	July	-17	Feb.	13.90
Fort Sidney	48.3		109	July	-10	Feb.	14.66
Fremont	50.4		96	July	-20	Feb.	22.14
Genoa	49.2		99	July	-19	Feb.	20.94
Hay Springs	45.2		104	July	-20	Feb.	19.16
North Loup			100	July	-10	Feb.	23.43
Minden			98	July	-16	Feb.	41.01
Nebraska City							12.20
Oakdale	46.5		99	July	-26	Feb.	16.92
Palmer	46.7		100	July	-10	Feb.	26.05
Ravenna			98	July	-8	Feb.	24.12
Syracuse	51.5		95	July	-8	Feb.	23.54
Tecumseh			94	July	-15	Feb.	
Weeping Water	48.9		100	July	-12	Feb.	30.82
<i>Nevada.</i>							
Carson City (1)	50.9		101	July	-11	Dec.	12.44
Carson City (2)			101	July	-7	Jan.	12.71
Crane's Ranch	56.9						10.23
El Dorado Canyon	73.7		110	July	32	Feb.	11.04
Elko	49.2						12.12
Ely	47.8		99	July	-15	Jan.	13.54
Eureka	49.2		106	July	-11	Jan.	9.29
Genoa	50.6		98	July	o	Jan.	23.68
Humboldt	50.3		100	July	1	Feb.	5.09
Lewers' Ranch	52.0		110	July	1	Feb.	23.10
Palisade	50.5		104	July	-6	Jan.	7.09
Pioche			104	July	-6	Jan.	27.35
Reno	51.2		98	July	-10	Jan.	7.56
Tuscarora	45.8		105	July	-10	Jan.	19.88
Verdi	50.7						16.34
<i>New Hampshire.</i>							
Antim							45.85
Belmont							42.64
Berlin Falls			97	July			
Berlin Mills	45.4		94	May	-28	Feb.	38.79
Bristol							44.62
Concord	47.6		92	May	-14	Feb.	40.98
Hanover	45.1	+ 2.4	89	July	-25	Feb.	37.51
Lake Village							46.07
Manchester (1)	48.4						42.93
Manchester (2)	48.5						42.60
Manchester (3)	48.1						36.94
Mine Falls							43.10
Nashua	48.4		95	May	-8	Feb.	42.33
North Conway			94	May	-21	Feb.	45.86
Pennichuck Station							39.69
Plymouth	44.7		96	May	-24	Feb.	44.17
Stratford	46.3		97	May	-27	Feb.	36.14
Shaker Village	45.0		90	June	-10	Feb.	38.84
Walpole	44.0		88	May	-16	Feb.	43.42
Weirs Bridge							40.87
West Milford	41.7		94	May	-44	Feb.	36.25
Wolborough							41.91
<i>New Jersey.</i>							
Allaire	53.2		90	May, Aug.			
Beverly	52.5		92	May	2	Feb.	57.13
Bridgeton	55.9		92	July	6	Feb.	56.75
Billingsport	54.6		92	June, July	4	Feb.	
Cape May	55.1		90	May, July	5	Feb.	
Egg Harbor City	52.5		91	May	1	Feb.	62.18
Freehold	51.9		88	June	-2	Feb.	70.75
Gillotte	51.5		93	July	-2	Feb.	62.41
Hanover			92	May	4	Feb.	65.80
Hopewell							62.49
Highland Park	52.2		89	July	0		

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Mean annual.	Temperature—degrees Fahrenheit.				Precipitation in inches.	
		Extremes for 1889.				Total for 1889.	Departure from normal.
		Max.	Month.	Min.	Month.		
New Mexico—Continued.	o	o	o	o	o	Inches.	Inches.
Fort Selden	109	July	— 9	Dec.	12.08		
Fort Union	90	July	— 10	Jan.			
Gallinas Spring	95	July	8	Jan.	13.11		
Las Vegas	48.6	July, Aug.	— 11	Jan.	18.42		
Springer	97				11.59		
New York.							
Ampersand	42.5	May	— 34	Feb.	42.42		
Angelica	44.9	May	— 22	Feb.	43.22		
Ardenia	51.4	May	5	Feb.	51.04		
Boyd's Corner	50.7	May, June	— 2	Feb.	54.29		
Canton	43.4	July	— 35	Feb.	43.31		
Carmel	50.1				56.40		
Central Park	52.5	May	— 25	Feb.	50.49		
Constableville	46.2	May	— 15	Feb.	38.57		
Cooperstown	44.9	May	2	Feb.	59.66		
Edon	49.0	May, July	7	Feb.			
Elmira	46.6	May	— 13	Feb.	39.92		
Factoryville	46.9	Sept.	— 4	Feb.			
Fleming	48.0	May	— 12	Feb.	30.99		
Geneva	47.3	July	9	Feb.	88.13		
Hess Road Station	47.3	May, Sept.	— 16	Feb.	45.21		
Humphrey	46.7	May	— 20	Feb.	43.12		
Ilion	46.6	May	— 12	Feb.	41.64		
Ithaca	47.3	July, Aug.	4	Feb.	48.79		
Kingston	46.9				— 24		
Lovillle					Feb.		
Lyons	47.6	July	— 3	Feb.	39.41		
Middleburgh	47.9	May	— 22	Feb.	38.55		
Nineveh	46.9	May	— 30	Feb.	54.71		
North Hammond	45.8	July	— 22	Feb.	35.49		
Number Four	41.2	May	— 27	Feb.	55.18		
Palermo	45.8	+ 1.7	May	— 9	Feb.	36.42	— 0.72
Palmyra	48.7	May	— 9	Feb.	34.42		
Pendleton	45.5		— 4	Feb.			
Potsdam	44.6	May	— 26	Feb.	52.39		
Perry City	45.0	July	— 14	Feb.	46.86		
Queensbury	45.0		— 10	Jan.	41.90		
Roudout	49.8				49.19		
Setauket	51.8	May	5	Feb.	53.87		
South Canisteo	46.5	May	— 12	Feb.			
South Kortright	44.8		— 14	Feb.			
Utica	46.6	July	— 23	Feb.	48.19		
Wedgewood	47.0	July	— 12	Feb.	44.66		
White Plains	51.6	July	4	Feb.	61.50		
North Carolina.							
Asheville (1)	55.4						
Asheville (2)	55.0	July	6	Feb.	38.76		
Charleston					38.92		
Lenoir	56.1	+ 0.8	89	May	45.25		
Mount Pleasant	69.1	May, July	8	Feb.	48.10	— 3.82	
Monroe	60.2		10	Feb.	49.55		
Murphy			16	Feb.	49.93		
Salisbury	59.8		20	Feb.	54.20		
Weldon	58.3				48.38		
Ohio.					58.25		
Akron	49.4	Sept	— 5	Feb.	33.96		
Ashland					34.83		
Athens	52.1	July, Sept.	3	Feb.	34.50		
Bangorville	48.9	July	— 6	Feb.	35.40		
Belleview	48.6	July	— 3	Feb.	30.12		
Canton	50.0	July	— 4	Feb.	40.08		
Celina	51.8	May	— 1	Feb.	30.81		
Circleville					36.71		
Clarksville	51.7	Sept.			31.88		
Cleveland	50.0	July	— 7	Feb.	32.00		
College Hill	55.4	Aug	— 2	Feb.	44.54		
Columbus Barracks			0	Feb.			
Dayton	53.4	July	— 1	Feb.	26.78		
Demos	50.6	July, Sept.	0	Feb.	35.67		
Elyria	50.5	July	— 4	Feb.	34.43		
Garretttsville	46.6	July	— 18	Feb.	36.37		
Georgetown	53.9	Aug.	6	Feb.	39.37		
Greenville	50.2	{ May }	0	Feb.	32.78		
Hanging Rock	52.6	{ Aug. }	0	Feb.			
Hiram	47.3	July	6	Feb.	38.26		
Jacksonborough	52.5	Aug., Sept.	— 12	Feb.	35.29		
Jefferson	47.0	May	0	Feb.	25.62		
Kenton	50.2	Sept	— 14	Feb.	36.46		
Logan	51.8	May	— 2	Feb.	35.14		
Lordstown	48.8	July	3	Feb.	39.30		
Marietta	53.5	{ July }	— 12	Feb.	29.21		
McConnelsville	52.6	{ Aug. }	3	Feb.	39.95		
Napoleon	95	July	0	Feb.	34.18		
New Alexandria	51.3	July	— 3	Feb.	34.82		
New Comerstown	50.1		— 1	Feb.	33.49		
North Lewistown	52.4	+ 2.0	96	July	31.05	— 8.14	
Oberlin	48.9	July	— 4	Feb.	28.54		
Ohio State University	51.2	Aug., Sept.	1	Feb.	28.69		
Ottawa					28.64		
Pomeroy	56.5	July	8	Feb.	32.25		
Portsmouth	54.2	July	8	Feb.	38.53		
Springborough					28.92		
Tiffin	50.8	July	1	Feb.	27.37		
Upper Sandusky	50.8	July	— 4	Feb.	33.71		
Wapakoneta	51.6	July	— 4	Feb.	21.32		
Waauseon	48.3	+ 0.9	94	Aug.	— 0.98		
Waynesville					35.33		
Westerville	50.1	July	0	Feb.	29.64		

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Mean annual.	Temperature—degrees Fahrenheit.				Precipitation in inches.	
		Extremes for 1889.				Total for 1889.	Departure from normal.
		Max.	Month.	Min.	Month.		
Ohio—Continued.	o	o	o	o	o	Inches.	Inches.
West Milton	55.1		98	May, July	2	Feb.	52.33
Weymouth	60.1		92	July, Sept.	— 5	Feb.	36.16
Wooster	48.6		90	May, July	— 2	Feb.	39.87
Yellow Springs	51.5		93	May	— 8	Feb.	30.08
Youngstown	50.8		93	May			32.72
Oregon.							
Albany	54.1		97	Sept.	22	Jan.	33.84
Ashland	55.5		98	June			17.81
Astoria	53.2						65.03
Bandon	52.4		98	June	26	Feb.	59.09
Cascade Locks							50.06
East Portland	53.7		96	July	20	Feb.	24.90
Eola	53.6	+ 2.5	94	July	18	Dec.	28.54
Gardiner							61.27
Jacksonville							18.04
Lone Rock							10.85
Mount Angel	54.2		96	July, Sept.	22	Jan.	33.92
The Dalles	52.8						7.51
Tillamook	53.1		85	July	14	Dec.	68.57
Vancouver Barracks	53.2						29.19
Pennsylvania.							
Allegheny Arsenal							
Altoona	54.0		94	July	— 3	Feb.	37.03
Blooming Grove			92	July	— 12	Feb.	
Courtesy			91	May, July	— 3	Feb.	68.94
Doylesburg	45.0	+ 1.2	89	July	— 20	Feb.	45.72
Edinborough			87	July	— 21	Feb.	63.97
Emporium	50.4		93	July	— 22	Feb.	47.89
Forks of Neshannock	51.3						61.72
Frankford Arsenal			95	July	— 2	Feb.	
Franklin	46.7		90	July	— 22	Feb.	43.78
Frederick							60.27
Germantown	52.6		88	{ May }	1	Feb.	57.80
Girardville			95	Aug.	— 4	Feb.	65.88
Grampian Hills			47.7	+ 2.5	— 24	Feb.	53.58
Hollidaysburgh	49.9		94	July	— 7	Feb.	45.23
Honesdale	46.2		86	July	— 15	Feb.	49.19
Huntingdon	49.9		93	May	— 8	Feb.	49.35
Lansdale			50.0	July	— 7	Feb.	65.10
New Bloomfield			94	July	— 1	Jan., Feb.	52.61
Ottsville			94	July	— 19	Feb.	71.09
Philipsburgh	45.9		94	July			46.72
Point Pleasant							
Pottstown			53.1	July	— 4	Feb.	71.32
Quakertown	50.0		92	July	— 4	Feb.	68.92
Reading	50.6		95	June	— 4	Feb.	65.02
Rimersburgh	49.7		92	July	— 13	Feb.	
Salem Corners	46.0		90	May	— 7	Feb.	55.34
Seisholtzville			52.2	May	— 4	Feb.	56.33
Selins Grove			92	May			68.73
Smith's Corner							
Somerset	46.8		92	May	— 13	Feb.	51.33
State College	48.9		90	July	— 14	Feb.	44.70
Swarthmore	51.0		91	July	— 16	Feb.	58.36
Troy			95	July	— 16	Feb.	
Uniontown	53.0		89	July	— 1	Feb.	53.96
Wellsborough	45.9		90	May, July	— 20	Feb.	60.45
West Chester	51.9		91	May, July	— 2	Feb.	73.00
Wysox	47.5		91	July	— 15	Feb.	41.38
Rhode Island.							
Bristol	50.4		86	July	— 1	Feb.	51.48
Kingston							53.53
Lonsdale							53.61
Newport	51.0		82	July	— 1	Feb.	
Olneyville	53.2		92	May	— 2	Feb.	
Pawtucket							58.49
Providence	51.3						55.91
Woonsocket	49.7						55.45
South Carolina.	58.2						4

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Temperature—degrees Fahrenheit.						Precipitation in inches.	
	Mean annual.	Departure from normal.	Extremes for 1889.				Total for 1889.	Departure from normal.
			Max.	Month.	Min.	Month.		
Tennessee—Continued.	o	o	o	July, Aug.	14	Feb.	Inches.	Inches.
Milan	58.5	+ 1.7	92	July, Aug.	14	Feb.	42.93	- 3.69
Nunnelly	57.5	.....	93	July	7	Feb.	52.47	.....
Parksville	58.6	.....	91	July	11	Feb.	39.64	.....
Riddleton	55.5	.....	89	(May, July)	8	Feb.	54.98	.....
Rogersville	56.3	.....	93	July	8	Feb.	37.43	.....
Trenton	57.5	.....	93	July	14	Feb.	45.74	.....
Watkins	59.7	.....	97	July	10	Feb.	35.31	.....
Waynesborough	57.4	.....	99	Sept.	18	Feb.	50.09	.....
Texas.	.....	.....	.....	.....	.....	.....	.....	.....
Austin	68.3	.....	97	July, Aug.	18	Feb.	31.44	.....
Brady	63.6	.....	93	July	30	Jan.	53.90	.....
Brazoria	67.1	.....	93	July	27	Feb.	41.09	.....
Brenham	70.0	.....	101	July	18	Feb.	34.70	.....
Brownwood	64.9	.....	101	July	9	Jan.	21.59	.....
Camp Peña Colorado	69.4	.....	99	July, Aug.	32	Jan.	42.63	.....
Columbia	62.4	.....	98	July, Aug.	16	Jan., Feb.	39.50	.....
Decatur	70.0	.....	.....	.....	.....	.....	29.85	.....
Eagle Pass	64.0	.....	107	July	18	Feb.	35.90	.....
Edinburg	64.0	.....	95	July, Aug.	35	Jan.	30.54	.....
Fort Bliss	60.0	.....	103	June	11	Jan.	11.34	.....
Fort Brown	66.7	.....	96	June, Aug.	11	Feb.	19.25	.....
Fort Clark	61.2	.....	106	July	3	Feb.	10.00	.....
Fort Davis	58.5	.....	104	June, July	28	Jan.	21.67	.....
Fort Elliott	61.3	.....	110	July	25	Jan.	21.67	.....
Fort Hancock	73.0	.....	95	July, Aug.	19	Feb.	45.98	.....
Fort McIntosh	68.0	.....	101	July	22	Jan.	31.67	.....
Fort Ringgold	67.4	.....	99	July	26	Jan.	39.20	.....
Gallinas	68.0	— 0.2	97	July	26	Feb.	51.12	.....
Huntsville	65.9	.....	98	July	22	Jan.	53.62	.....
La Grange	67.6	.....	104	July	12	Jan.	47.46	.....
Lampasas	65.9	.....	101	Aug.	12	Jan.	45.98	.....
Longview Junction	66.2	.....	101	July	25	Feb.	41.80	— 15.14
Mesquite	65.2	.....	101	July	25	Feb.	41.80	— 15.14
New Braunfels	65.8	.....	101	July	25	Feb.	41.80	— 15.14
New Ulm	68.0	.....	97	July	27	Jan.	54.95	.....
Panter	.....	.....	.....	.....	.....	.....	.....	.....
San Antonio	68.9	.....	106	July, Aug.	29	Jan.	.....	.....
Silver Falls	60.0	.....	104	July	8	Feb.	.....	.....
Waco	67.1	.....	100	July, Aug.	21	Feb.	40.05	.....
Utah.	.....	.....	.....	.....	.....	.....	.....	.....
Blue Creek	109	.....	106	June, July	5	Jan.	18.66	.....
Camp Douglas	52.9	.....	102	July	5	Jan.	38.48	.....
Corinne	53.5	.....	105	July	— 4	Jan.	45.54	.....
Fort Du Chesne	46.0	.....	103	July	— 22	Jan.	57.53	.....
Kelton	53.6	.....	110	July	— 12	Jan.	40.67	.....
Ogden	52.4	.....	98	June, July	— 4	Jan.	47.45	+ 7.32
Price	.....	.....	104	July	— 10	Jan.	52.59	.....
Terrace	.....	.....	.....	.....	.....	.....	48.95	.....
Vermont.	48.4	.....	.....	.....	.....	.....	48.95	.....
Brattleborough (1)	47.2	.....	.....	.....	.....	.....	48.95	.....
Brattleborough (2)	48.3	.....	90	May	— 15	Feb.	38.21	.....
Burlington	48.3	.....	82	May	— 21	Feb.	46.34	.....
Chelsen	42.1	.....	.....	.....	.....	.....	38.48	.....
Cornwall	.....	.....	94	May	— 35	Feb.	45.54	.....
East Berkshire	43.0	.....	92	May	— 30	Feb.	57.53	.....
Jacksonville	44.4	.....	95	May, June	— 26	Feb.	40.67	.....
Lunenburg	45.8	.....	92	May	— 31	Feb.	47.45	.....
Saint Johnsbury	42.0	.....	90	May	— 20	Feb.	52.59	.....
Strafford	45.9	+ 1.5	90	June	— 20	Feb.	52.59	.....
Vernon	48.5	.....	96	June	— 20	Feb.	52.59	.....
Virginia.	.....	.....	.....	.....	.....	.....	52.59	.....
Birdsnest	57.6	— 0.7	90	June, July	1	Feb.	71.35	+ 26.67
Christianburgh	.....	.....	92	July	.....	.....	37.32	.....
Dale Enterprise	56.6	.....	103	July	1	Feb.	52.54	.....
Fort Monroe	58.1	.....	92	(June, July)	15	Feb.	68.38	.....
Fort Myer	54.5	.....	95	July	2	Feb.	59.59	.....
Petersburgh	56.4	.....	90	June	10	Feb.	61.33	.....
Spottsville	57.0	.....	98	June	10	Feb.	71.85	.....
Smithfield	57.4	.....	90	July	10	Feb.	72.25	.....
Summit	52.7	.....	90	June, July	.....	.....	61.66	.....
University of Virginia.	.....	.....	.....	.....	.....	.....	52.59	.....
Washington.	50.0	.....	102	July	— 8	Jan.	12.93	.....
Fort Spokane	51.0	+ 0.9	88	July	24	Feb., Dec.	15.00	— 5.41
Fort Townsend	53.6	.....	95	July	19	Jan.	29.52	.....
Fort Vancouver	52.8	.....	102	July	8	Jan.	13.73	.....
Port Blakely	51.6	.....	91	July	23	Feb.	29.79	.....
Vashon	52.2	.....	92	July	23	Feb.	22.44	.....
West Virginia.	.....	.....	.....	.....	.....	.....	54.54	.....
Buckhannon	.....	.....	.....	.....	.....	.....	48.29	.....
Charleston	.....	.....	.....	.....	.....	.....	49.03	.....
Morgantown	.....	.....	.....	.....	.....	.....	35.74	.....
Rowlesburgh	.....	.....	98	July	5	Feb.	44.48	.....
Tyler Creek	.....	.....	98	July	5	Feb.	31.51	.....
Weston	.....	.....	.....	.....	.....	.....	51.9	.....
Wheeling.	.....	.....	.....	.....	.....	.....	51.4	.....
Wisconsin.	.....	.....	.....	.....	.....	.....	51.4	.....
Cadiz	.....	.....	.....	.....	— 12	Feb.	21.52	.....
Chippewa Falls	44.9	.....	93	July	— 36	Feb.	33.75	.....
Embarass	45.3	.....	91	Aug	— 23	Feb.	28.15	.....
Fond du Lac	46.4	+ 1.2	92	July	— 20	Feb.	20.17	— 16.77

Annual summary for 1889—Voluntary stations—Continued.

State and station.	Temperature—degrees Fahrenheit.						Precipitation in inches.	
	Mean annual.	Departure from normal.	Extremes for 1889.				Total for 1889.	Departure from normal.
			Max.	Month.	Min.	Month.		
Wisconsin—Continued.	o	o	o	July, Aug.	14	Feb.	Inches.	Inches.
Manitowoc	46.4	.....	90	July, Aug.	— 21	Feb.	28.52	.....
Phillips	.....	.....	.....	.....	.....	.....	23.37	.....
Portage	.....	.....	.....	.....	.....	.....	24.89	.....
Wyoming.	.....	.....	.....	.....	.....	.....	.....	.....
Camp Pilot Butte	44.8	.....	97	July, Aug.	— 30	Jan.	4.31	.....
Camp Sheridan	40.9	.....	91	July, Aug.	— 15	Feb.	20.63	.....
Fort Bridger	.....	.....	.....	.....	.....	.....	24	Jan.
Fort D. A. Russell	43.5	.....	100	July	— 23	Feb.	.....	.....
Fort Laramie	106	.....	106	July	— 21	Feb.	10.83	.....
Fort McKinney	47.1	.....	95	June	— 13	Feb.	5.27	.....
Fort Washakie	43.0	.....	94	July	— 24	Feb.	8.40	.....

The following reports were received too late to be used in preparing the charts and discussion :

State and station.	Temperature—degrees Fahrenheit.						Precipitation in inches.	
	Mean annual.	Departure from normal.	Extremes for 1889.				Total for 1889.	Departure from normal.
			Max.	Month.	Min.	Month.		
California.	59.4	.....	102	Sept.	24	Jan., Feb.	79.54	.....
Felton	53.9	.....	110	July	13	Feb.	56.88	.....
Fort Gaston	62.7	.....	106	July	28	Jan.	25.08	.....
Galt	.....	.....	99	July	24	Feb.	.....	.....
Georgetown	58.4	.....	103	July	24	Feb.	62.51	.....
Glen Ellen	57.7	.....	107	July	2	Jan.	13.34	.....
Hornbrook	.....	.....	116	Aug.	30	Feb.	.....	.....
Indio	62.9	.....	107	July	24	Feb.	.....	.....
Keele	64.8	.....	114	Aug.	28	Feb.	84.14	.....
La Grange	60.2	.....	101	Aug.	28	Feb.	.....	.....
Laurel	64.1	.....	97	July, Aug.	29	Jan., Feb.	26.94	.....
Long Beach	58.2	.....	110	July, Aug.	29	Jan.	.....	.....
Norwalk	.....	.....	90	July	34	Dec., Feb.	19.16	.....
Selma	.....	.....	110	July, Aug.	29	Jan.	101.25	.....
Stockton	48.8	.....	98	July, Sept.	34	Dec., Feb.	.....	.....
Truckee	56.8	.....	98	July	— 12	Dec.	.....	.....
Upper Mattole	55.8	.....	115	July	30	Dec., Feb.	.....	.....
Williams	.....	.....	.....	.....	.....	.....	.....	.....
Georgia.	55.2	.....	90	July	26	Feb.	41.44	.....
Hephzibah	.....	.....	95	Aug.	— 17	Feb.	.....	.....
Illinois.	46.3	.....	95	Aug.	— 17	Feb.	.....	.....
Fort Sheridan	.....	.....	104	Aug.	— 10	Feb.	.....	.....
Iowa.	46.3	.....	104					